



SPACES

Jennifer Licht

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The Museum of Modern Art, New York

Actual space is, of course, immaterial. Because it cannot be perceived by any of the five senses, it must be qualified by boundary or incident, and can be comprehended through direct kinesthetic experience. In the past, space was merely an attribute of a work of art, rendered by illusionistic conventions in painting or by displacement of volume in sculpture, and the space that separated viewer and object was ignored as just distance. This invisible dimension is now being considered as an active ingredient, not simply to be represented but to be shaped and characterized by the artist, and capable of involving and merging viewer and art in a situation of greater scope and scale. In effect, one now enters the interior space of the work of art—an area formerly experienced only visually from without, approached, but not encroached upon—and is presented with a set of conditions rather than a finite object. Working within the almost unlimited potential of these enlarged, more spatially complex circumstances, the artist is now free to influence and determine, even govern, the sensations of the viewer. The human presence and perception of the spatial context have become materials of art.

The present exhibition is comprised of six individual projects, the primary condition and determining factor of which lie in such an encompassing spatial experience. To accommodate its special nature, the gallery was divided into several rooms, providing each artist with an independent and anonymous spatial field, devoid of architectural feature, with which he was free to deal, and the Sculpture Garden was put at the disposal of the Pulsa group.

The plastic use of space surpasses traditional definitions of and restrictions upon the means of art. Michael Asher, in fact, employs entirely nonvisual means to organize, structure, and divide space. His proposal is for a room as bereft of visual configuration and detail and as architecturally unified as he can make it. These eliminations and expurgations cause, however, a positive sensation of the spatial volume. One's expectation is for something to look at,

but Asher reduces visual evidence to such a degree that the room can be characterized as a void; and he calls on senses that are less accustomed than sight to apprehend space. Earlier, by using currents of air, and now, by using sound, Asher creates, controls, and articulates sensory space. If a discernible style can be defined in his work, it is one of reduction and subtlety, which demands the intensification and heightening of our powers of perception. Space itself is Asher's medium; he both shapes and activates it through distribution of anonymous sound sources, ordering both their amplitude and direction. His materials are products of technology—the essential conditioning agents of our times—and meaningfully symbolize our environment.

Earlier in the twentieth century, the collage tradition symbolized contemporary society by adopting found objects, usually discarded remnants, as legitimate elements of art. Kurt Schwitters said, "It is irrelevant whether materials had any established value before they were used for producing a piece of art. They receive their evaluation through the creative process."¹ For Dan Flavin, fluorescent light functions as both material and medium. His original decision to work with this familiar commodity as an adjunct to painted structure did not represent for him the incorporation of technology into the realm of art, but was a token of his everyday environment and had the significance of a found object. The special propensity of fluorescent light to project aura, however, gave it the implication of infinite space; it was then natural and inevitable for Flavin to exploit this quality by deploying fluorescent lamps alone, first to alter our perception of a particular area in discrete works, then to distribute light systematically in formations that conditioned entire areas through light-color. His medium has been sufficiently flexible to allow a range of spatial effects and physiological responses, some bordering on sensory deprivation. The saturating quality of green, for example, brings about a sensation of atmospheric weight, and the eye's exposure to the color causes a compensatory

reddening in one's perception of natural light. The particular qualities and psychological potential of Flavin's medium, together with its authority over space, endow his works with a special sense of place, and the effect is often to imbue an otherwise anonymous area with the power to promote feelings akin to primitive awe at a sacred grove.

Artists are also entering that province of spatial exploration which formerly belonged exclusively to architecture, i.e., the space that accommodates man. But while they may approximate architectural forms these will tend to be abstract and absolute, with only an artistic (conceptual) purpose. Larry Bell's work for the exhibition takes the form of panels of glass, which are of architectural proportions and operate in an architectural domain. Bell developed an individual technique of vacuum-coating glass, producing in his earlier, implacably cubiform sculptures intricate penetrations of—and correspondences among—interior, depth, and surface. His technique endows the glass with properties of partial transparency, which play against mercurial reflections and result in most insubstantial intimations of color and halation. The ability of the treated glass to refract light is now exploited for an extroverted treatment of the surrounding space in adjunct to the walls of the room. The formerly self-contained and self-sufficient space of Bell's earlier boxes becomes experiential and accommodates human activity. The illusory and self-effacing qualities of the planes of glass, the action of light cast in the space around them, and their new scale, allow the work a command over areas beyond itself.

In his proposal for a complex project of manifold contradictions and ironies, Robert Morris manipulates scale and its capacity to influence the sense of space. He contrasts human proportions with miniature groves of fir trees, planted in diminishing size to create impressions of distant vistas. With this artificial recreation of a natural environment, Morris puts the real but limited space of the interior enclosure at the service of an illusion of the deep perspective of an extensive

outdoor area. For the illusion to create its complex effects, the participant's movements and his psychological reactions must be restricted; and a steel-faced cruciform trench serves to constrict his actions and direct his vision.

All six surfaces of the room are employed; the floor is covered with steel, and the ceiling with fluorescent "grow" lights. Even the air itself is a vehicle, for it must be injected with sympathetic climatic conditions, humidity and cold, to keep the trees alive. (Originally the air was to be imbued with an additional fillip, negative ions, which induce feelings of euphoria, but this aspect could not be realized.) The rendering of atmosphere as a painterly subject is played upon, for Morris's "atmosphere" is meteorological fact. Temporal elements are also present; his landscape will grow and chemical changes will cause the appearance of the steel sheathing to alter in the humid atmosphere. Here the artist is presenting a museum—traditionally an institution expending its energies and resources to preserve the inert matter of art—with the incongruous task of preserving live organisms of nature. The diversity of simultaneous concerns in the room reflects the broad range of expression of the artist himself; he was earlier deeply involved in dance and performance while also making sculptural objects.

The confluence and synthesis of the visual and performing arts was advanced for modern times by Richard Wagner in his theory of the *Gesamtkunstwerk*. That concept flourishes today, as evidenced by the overlapping of mediums and the obscuring of old boundaries that delineated and distinguished between the arts; and also, ironically enough, by the multi-sensory spectacles of electrified discotheques. In music, drama, dance, and film, spatial form has been redistributed and restructured to embrace the spectator in a total and circumferal, rather than a solely frontal, experience. Working within a situation that reflects the gradual breaking down of rigid categories, artists now have greater freedom for any avenue of expression, and any sister art is open to them. Pulsa, a collaborative group of seven artists, works

with multi-sensory perception and electronic technology, programming extended areas of experiential space in zones of light, sound, and heat. The degree of activity in a piece depends upon chance stimuli from the existing environment in reciprocal interaction with computer programming; influential factors include human presence, traffic, and weather. Pulsa intends its work to correspond and integrate with existing conditions. For this exhibition, the group works outdoors in the Sculpture Garden, an area whose own rather idyllic, picturesque features contrast with the clamor of the urban environment of midtown-Manhattan. The area's surrounding surfaces are used for the location of equipment, but the work is actually perceived in aerial space, free from relation to physical support or matter. The phenomenological aspect of the work and the artists' interest in relating to existing environmental conditions result in an elusiveness that emphasizes our awareness of the passage of time. The instant we become aware of the issuance of an energy, it has already changed form and location. Capturing a sense of it involves prolonged exposure and gradual comprehension.

The consciousness of time is fundamental to all the projects in the exhibition. It can be understood as the mental process between sensory perception and intellectual comprehension, or as manifested through the physical change of form and matter, or again as a kinesthetic investigation of territory. Franz Erhard Walther works with movement in distance and time and the psychology of personal space. His "Instruments for Processes" dictate and regulate contact, either between the participant and the work itself, inducing heightened awareness of physicality and self-examination, or between the participant and others in a new spatial relationship that the object has forced upon him. They operate in a space that we have almost always regarded as inviolable and as ours alone to control—the private orbit that we maintain around ourselves as separation from other people and things—and thereby they affect and influence our emotional states.

Walther often uses canvas, traditionally a fine art material, to structure his work, but he stresses its associations with outdoor recreation. Whether the pieces are designed for interior or exterior spaces, their basis lies in play situations. Often their manner of functioning exemplifies the artist's preoccupation with isolation and contemplation. Sometimes one is completely enclosed within a piece and excluded from perceiving anything but the immediate knowledge of one's own being; sometimes one is placed together with other participants, yet isolated from them and forced by the object to maintain a relation regulated by distance. These activities are disturbing and arouse rarefied feelings of one's own physical and mental processes, and one's relationship to others. Such attenuated experience is induced by an art that undermines our autonomy over personal terrain.

These six projects are examples of contemporary investigations of actual, areal space as a nonplastic, yet malleable, agent in art. Their stylistic diversity testifies to the broad range of current interest in the idea of space. In fact, the primacy of space belongs within a larger context of modern thought. Space—sensorial, social, ecological, extraterrestrial—has become the central issue of our time. Philosophers such as R. Buckminster Fuller and Gaston Bachelard have redefined its meanings, composers John Cage and Karlheinz Stockhausen have distributed sound and activity in space, and Frank Lloyd Wright and Ludwig Mies van der Rohe have developed new spatial experiences in architecture. This universal interest has helped create an intellectual milieu congenial to art, and has been as influential as developments within art itself upon the new artistic concerns. Until social and scientific thought and parallel developments in other arts could create a context wherein art could be the conditioning of space and environment, and technological resources were available to realize theoretical concepts of space, they outstripped the artist's ability to achieve appropriate form. Therefore, the history

of this concept does not manifest itself through a coherent sequence of forms. But one can determine some antecedents and present relevant theories that may have shaped attitudes and prepared the ground for its development.

Possibly the most prophetic statement was Boccioni's declaration in the "Technical Manifesto of Futurist Sculpture" of 1912, "That there can be no renovation if not through a SCULPTURE OF ENVIRONMENT, for through this plasticity will be developed and, continuing, will be able to MODEL THE ATMOSPHERE that surrounds things."² The Futurists' theories of the environmental transcendence of the art object were original and powerfully stated. In *Fusion of a Head and a Window* (1911–12, now destroyed), Boccioni joined a portion of an actual window with a plaster head to express the interpenetration of object and spatial envelope. He did not realize the full potential of the synthesis, but the legacy of the Futurists had vital consequences. Through their heralding of technology and their skill at self-publicizing in their public demonstrations they essentially prepared for the merging of art and daily life that Dada was to achieve. This was to lead, through Schwitters's *Merzbau* and Duchamp's creation of environmental schemes for two important Surrealist exhibitions, to aspects of the postwar "collage environment" of neo-Dada aesthetics.

Another major consequence of Futurism was its impact on the Russian avant-garde. The Constructivists investigated the substitution of space for mass in sculpture and articulated a need for art to have a basis in scientific and technological knowledge. Tatlin took up the spatial implications of the collage aesthetic, combining the discoveries of Picasso's three-dimensional relief constructions and Futurist spatial interpenetration to result in his counterreliefs spanning corner space. Gabo, who had studied mathematics and physics, proposed space as a sculptural element, delineating and dividing it by edges of transparent planes. In his "Realistic Manifesto" of 1920 he wrote, "The realization of our

perceptions of the world in the forms of space and time is the only aim of our pictorial and plastic art."³

Lissitzky's concerns with space developed from his spatially complex Proun paintings, begun in 1919, which he called "the junction from architecture to painting,"⁴ to the actual extension of his ideas into architectural space. His consideration of the room as a six-sided enclosure that through artistic treatment could influence the experience and reactions of the occupant was realized in three exhibition rooms. But although he recognized and wrote of the potential that room space had actively to affect the person within it, he in fact neglected the dynamic treatment of volume itself and retained a painter's planar treatment of the walls. Lissitzky continued to think of space as a void to be shaped by its enclosures rather than as an active, elementary condition. Similarly, Mondrian, who met and exchanged ideas with Lissitzky, predicted, in an essay of 1919–20, "The abstract-realist picture will disappear as soon as we can transfer its plastic beauty to the space around us."⁵ His paintings imply the determination of space beyond their own borders, and about 1932 he did in fact plan (but did not execute) a complete room, treating all six surfaces. Mondrian could conceive of a future "end of art as a thing separated from our surrounding environment, which is the actual plastic reality,"⁶ but his treatment of space also remained planar and he did not project his art into spatial area.

Schwitters was successful in realizing his theories, if theory is not too formal a term for such an improvisational artist. His incorporation of associative elements from his everyday environment into collages and assemblages logically expanded into architectural space. Schwitters was quite deeply involved with architecture, and in an essay of 1923 he wrote, "one must create an intensive relationship between Man and Space."⁷ That same year, he began to construct his own artificial environment, the *Merzbau*. Its overall character is described by a visitor as "a sculpture of compound forms

which extended from a corner of his studio through two stories of his house, winding in and out of doors and windows, and curling around a chimney on the roof.”⁸ The way in which the *Merzbau* evolved from a central, original column, sprawling divergently in uncontained growth, embodied an organic concept. Like a living organism, it progressed through time, perpetually changing as it absorbed memorabilia of the daily life of the artist and the people around him. The building of the *Merzbau* was the creation of it, for like any true experiment it was empirical; idea and act were intuitively combined without preconception of finite form or outcome. It was “unfinished, specifically on principle”⁹ and conceived to continue its growth ad infinitum.¹⁰ Schwitters’s attitude toward architecture was predominantly definant challenge, and when he himself entered its domain, his treatment was essentially antirational. Thus the *Merzbau* appropriated the comprehensive, experiential space of architecture for an absolute sculptural environment. Unlike Lissitzky and Mondrian, who opted for planar treatment of spatial enclosures, Schwitters tackled the shaping of actual volume. In this he importantly presaged future directions; but contemporary works are dealing with the activation of literal space and regard it per se as a primary factor, rather than a subsidiary, to be molded through exterior form.

Schwitters himself called the *Merzbau* a “typical violet that blooms hidden,”¹¹ and historically it remains a rather isolated masterpiece, prevented by distance and destruction from direct influence on succeeding developments, but more relevant than ever in the light of present concerns. The *Merzbau* was the culmination of the collage-assemblage aesthetic brought to architectural complexity and scale; but the general tradition was more influential than any particular monument. It was widely diffused as concept and technique and was instrumental in breaking down divisions between painting and sculpture. The initial addition of extraneous paper and material to the surface led to the acceptance of new

materials as medium and eventually to the incorporation of physical space and human action into the work of art.

The mixed-media activities of the late 1950s—the Environments and Happenings of Kaprow, Dine, Oldenburg, and others, and the tableaux of Kienholz and Segal—were the direct inheritors of Schwitters’s Dada application of collage-assemblage techniques. The para-theatrical nature of these artists’ activities was an appropriation of the physical and kinesthetic experience of the stage. Theater had, in fact, earlier attracted artists interested in extending the possibilities of space, but in general they retained the critical separation between performer and spectator. Environments and Happenings largely overcame this distinction by involving the spectator, but they concentrated on activity within a situation rather than on characterizing the spatial volume.

The artistic qualification of space itself is the primary fact of the more comprehensive spatial experience that followed. It was an outgrowth of an amalgamation of larger artistic traditions with the particular cultural concerns of the present moment. In this “Space Age,” space is no longer an abstraction. Synthesizing the greater intellectual and physical scope demanded by such times, art may be developing a new humanism in its incorporation within its context of man and his actions and reactions.

J. L.

1. Kurt Schwitters, *Merz 1* (Hanover), January 1923, p. 9.

2. Umberto Boccioni, “Technical Manifesto of Futurist Sculpture,” in Joshua C. Taylor, *Futurism*, New York: Museum of Modern Art, 1961, p. 132.

3. Naum Gabo, “Realistic Manifesto,” in Herbert Read, *Naum Gabo*, London: Tate Gallery, 1966, p. 4.

4. El Lissitzky and Hans Arp, *Die Kunstismen*. Erlenbach-Zürich: Eugene Rentsch Verlag. 1925, n.p.

5. Piet Mondrian, “Natural Reality and Abstract Reality,” in Michel Seuphor, *Piet Mondrian*, New York: Abrams, 1956, p. 339.

6. Piet Mondrian, “Plastic Art and Pure Plastic Art,” in Robert Motherwell, ed., *The Documents of Modern Art*, vol. 2, New York: Wittenborn, 1945, p. 62.

7. Schwitters, *Merz 1*, p. 11.

8. Sybil Moholy-Nagy quoting László Moholy-Nagy, in Robert Motherwell, ed., *The Dada Painters and Poets*, New York: Wittenborn, 1951, p. xxiii.

9. Kurt Schwitters, *Merz 21: Erstes Veilchen Heft* (Hanover), 1931, p. 115.

10. Partially destroyed by bombing in 1943, it was subsequently totally demolished by exposure to the weather as Schwitters, a refugee in England, was unable to return to protect it.

11. Kurt Schwitters, *Merz 21*, p. 116.



Pulsa

Untitled. 1969.

Environmental sensors, voltage controlled sound and signal synthesizer, computer, teletype, high speed punch-paper tape reader, data-phone decoder, remote facilities, speakers, strobe lights, infrared heaters.

In the Sculpture Garden.

Computer, teletype, data-phone donated by Agrippa-Ord Corporation. Program by Robert Nagel. Transistors donated by Radio Corporation of America. Power conditioner lent by Ambac Industries. Speakers lent by Electro-Voice Incorporated and Bauer Electronics Incorporated. Amplifiers lent by Bogen Division, Lear-Siegler Incorporated. Microphones lent by Electro-Voice Incorporated. Wire donated by Whitney-Blake Corporation. Outdoor infrared heaters lent by Luminator Incorporated. Heater switches lent by General Electric. Large strobe lights donated by Berkey Technical. Bulbs donated by Sylvania Incorporated. Photoresistors donated by Clairex.

PROPOSAL (in a letter to Jennifer Licht, Oct. 2, 1969)

Our proposal for the sculpture garden is to place sixty strobe lights and approximately the same number of small speakers in clusters of varying densities on the ground, walls, and surfaces of the buildings that define the garden. The configuration will be established in a predominately east-west traverse of the space. The vertical expansion of the territory of the museum proper will include just those buildings occupying the same block as the museum, and we will use only lights at those positions. The sound activity from the speakers will occur within the garden and will be of low amplitude, at times dropping out and being masked by the sounds of the city.

At twelve locations within the garden people will activate directional, microphone/speaker feedback systems which will be responsive to their presence and movement as well as that of the wind, passing airplanes, and cars. We will also install twenty-seven outdoor infrared heaters, which will be operated by thermostats and our control system.

This piece will be characterized primarily by information taken directly from the environment, which is modified by a computer signal synthesizing system. There will be many levels of feedback loops and interaction, producing a kind of ecology amongst the several systems.

On an immediate level, information enriched through feedback will be exemplified by the real time interaction of viewers within fields of sonic response, and the thermostatic control of the infrared heaters, which will produce zones of radiant heat energy as well as waves of atmospheric distortion.

We also plan to use arrays of cadmium sulfide photoresistors in conjunction with two closed-circuit television cameras which will be placed atop the museum. By using wide angle lenses the two cameras will survey the entire garden. These sensors will receive and relay information regarding traffic flow between various zones of activity, and strobe light information. The sequencing and patterning of the light information can be related to densities of population within the garden.

Ideally we would like the system to be continuously activated for the duration of the show. The level of activity within the space will vary according to the processed input information. Perhaps a passing car late at night would activate a photoresistor and all fifty strobes would fire sequentially from east to west, or a particularly strong breeze would elicit a response from the microphone/speaker feedback circuit.

Because we plan our work for situations that allow free public access at all times, we should like to request that people be allowed to enter the Pulsa installation free of charge through the gate on 54th Street until 9:00 p.m.

Thank you for agreeing to our fee.



Yale School of Art and Architecture, New Haven. April 10–September 30, 1968



Boston Public Garden. October 9–29, 1968

Thoreau mentions floating silently down the Concord river, seeing the water lilies all flash open simultaneously at dawn in response to the first presence of light.

One of the basic things about man is that he has developed awareness beyond the level of primarily reacting to external conditions. He has developed sensibilities for exploration—a particular gait, for selectively moving through environments. This sensibility underlies the development of culture.

Interacting with the land. Animal paths in the woods.
Highways.

Monte Alban. Moving through.

The way in which things flow around things.

The highways at night. The whole thing of being suspended on a causway, going along at sixty miles an hour with the lights coming at you and receding behind. You can see lights, on some occasions, fifty miles away becoming for perhaps an instant defined as having some detail within a terrestrial environment, and then receding again as points. The flow of various lights against each other.

Parallax.

And also the sound experiences. Driving past poles or through tunnels.

Past cars. The way phasing changes.



Yale Golf Course, New Haven. December 25, 1968–March 15, 1969



Wadsworth Atheneum, Hartford. October 18–November 7, 1969

Sometimes incredible sounds are heard late at night near the thruway. Rumbles and subtle sounds that shift until the spaces between the noises become the sounds you hear.

Large trucks.

The sound of the tires on the pavement.

We're using technology—the computer, sensors, etc.—to produce sensory phenomenema. The instrumentation is not concealed. Whatever we learn how to do can be done by others.

Not only that, it's important for people to understand the tool, so that it can't be used to manipulate them. Society has got to be aware of all aspects of its tools.

But at the same time the aesthetic experience is not dependent on the computer even though that's part of the system, and the total experience.

Everything that's experienced under normal conditions in an environment is seen in terms of some context of usefulness. The work that we're doing provides experiential alternatives to this use orientation, by making environmental phenomena accessible on an abstract level.

Michael Asher

Born Los Angeles, California, 1943. One-man exhibition: La Jolla Art Museum, California, 1969. Selected group exhibitions: *New Work—Southern California*, Art Gallery, University of California at San Diego, 1968; *West Coast Now*, Portland Art Museum, Oregon, 1968; *The Appearing—Disappearing Image*, Newport Harbor Art Museum, Newport Beach, California, 1969; *Anti-Illusion*, Whitney Museum of American Art, New York, 1969; *557087*, Pavilion of the Seattle Art Museum, 1969. Lives in Venice, California.

Larry Bell

Born Chicago, Illinois, 1939. One-man exhibitions: Ferus Gallery, Los Angeles, 1962, 1963, and 1965; Pace Gallery, New York, 1965 and 1967; Galerie Ileana Sonnabend, Paris, 1967; Stedelijk Museum, Amsterdam, 1967; *6 Artists: 6 Exhibitions*, Walker Art Center, Minneapolis, 1968. Selected group exhibitions: *The Responsive Eye*, Museum of Modern Art, New York, 1965; *Primary Structures*, Jewish Museum, New York, 1966; *The 1960s*, Museum of Modern Art, New York, 1967; *American Sculpture of the Sixties*, Los Angeles County Museum of Art, 1967; *Vth Guggenheim International Exhibition*, Solomon R. Guggenheim Museum, New York, 1967; *Documenta IV*, Kassel, 1968; *Kompass IV*, Stedelijk van Abbemuseum, Eindhoven, 1969. Lives in Venice, California. Represented by Pace Gallery, New York.

Dan Flavin

Born New York City, 1933. One-man exhibitions: Judson Gallery, New York, 1961; Kaymar Gallery, New York, 1964; Green Gallery, New York, 1964; Ohio State University, Columbus, 1965; Galerie Rudolf Zwirner, Cologne, 1966; Nicholas Wilder Gallery, Los Angeles, 1966; Kornblee Gallery, New York, January and December 1967; The Museum of Contemporary Art, Chicago, 1967–68; Galleria Sperone, Turin, 1968; Galerie Heiner Friedrich, Munich, 1968; Pennsylvania State University, State College, 1968; Dwan Gallery, New York, 1968; Galerie Konrad Fischer, Düsseldorf, 1969; Irving Blum Gallery, Los Angeles, 1969; Galerie Bruno Bischofberger, Zurich, 1969; Retrospective Exhibition, The National Gallery of Canada, Ottawa, 1969. Selected group exhibitions: *Primary Structures*, Jewish Museum, New York, 1966; *Kunst Licht Kunst*, Stedelijk van Abbemuseum, Eindhoven, 1966; *The 1960s*, Museum of Modern Art, New York, 1967; *Kompass III*, Stedelijk van Abbemuseum, Eindhoven, 1967; *Plus by Minus*, Albright-Knox Art Gallery, Buffalo, 1968; *Minimal Art*, Gemeetmuseum, The Hague, 1968; *Documenta IV*, Kassel, 1968. Lives in Cold Spring, New York. Represented by Leo Castelli Gallery and Dwan Gallery, New York.

Robert Morris

Born Kansas City, Missouri, 1931. One-man exhibitions: Dilexi Gallery, San Francisco, 1957 and 1958; Green Gallery, New York, 1963, 1964, and 1965; Galerie Schmela, Düsseldorf, 1964; Dwan Gallery, Los Angeles, 1966; Leo Castelli Gallery, New York, 1967, 1968, and 1969; Stedelijk van Abbemuseum, Eindhoven, 1968; Galerie Ileana Sonnabend, Paris, Spring and Fall 1968; Galleria Sperone, Turin, 1969; Irving Blum Gallery, Los Angeles, 1969; Corcoran Gallery of Art, Washington, D.C. 1969. Selected group exhibitions: *Primary Structures*, Jewish Museum, New York, 1966; *American Sculpture of the Sixties*, Los Angeles County Museum of Art, 1967; *International*, Institute Torcuato di Tella, Buenos Aires, 1967; *Kompass III*, Stedelijk van Abbemuseum, Eindhoven, 1967; *Vth Guggenheim International Exhibition*, Solomon R. Guggenheim Museum, New York, 1967; *Art of the Real: USA 1948–1968*, Museum of Modern Art, New York, 1968; *When Attitudes Become Form*, Kunsthalle, Berne, 1969. Lives in New York City. Represented by Leo Castelli Gallery, New York.

Pulsa

Group of 7 (originally 10) researchers in programmed environments, formed 1967. Present members: Michael Cain, born Boston, Massachusetts, 1941; Patrick Clancy, born Hornell, New York, 1941; William Crosby, born New Haven, Connecticut, 1939; William Duesing, born Detroit, Michigan, 1942; Paul Fuge, born Plainfield, New Jersey, 1946; Peter Kindlmann, born Vienna, Austria, 1939; David Rumsey, born New York, New York, 1944. Exhibitions: Experimentation and Public Showings in Loft, New Haven, 1967–68; Yale School of Art and Architecture, New Haven, 1968; Boston Public Garden, 1968; Yale Golf Course, New Haven, 1968–69; Louis Weiner Farm, Bethany, Connecticut, 1969; *Electric Ear*, Electric Circus, New York, 1969; Wadsworth Atheneum, Hartford, 1969. Live in Harmony Ranch, Oxford, Connecticut. Pulsa's research is sponsored by Yale University and The Graham Foundation for Advanced Studies in the Fine Arts.

Franz Erhard Walther

Born Fulda, Germany, 1939. One-man exhibitions: Galerie Aachen, Aachen, 1966; Galerie Heiner Friedrich, Munich, 1967 and 1969; Kunstakademie, Düsseldorf, 1967; Galerie Rudolf Zwirner, Cologne, 1969; Galerie Neuendorf, Hamburg, 1969; Museum Haus Lange, Krefeld, 1969; Studio F. Ulm, 1969; Kunsthalle, Düsseldorf, 1969. Selected group exhibitions: Nationalgalerie, Berlin, 1969; *When Attitudes Become Form*, Kunsthalle, Berne, 1969. Lives in New York City. Represented by Galerie Heiner Friedrich, Munich.



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